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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,622	06/10/2005	Kai Eck	DE 020321	8874
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EXAMINER				
WANG, CLAIRE X				
ART UNIT		PAPER NUMBER		
2624				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/538,622

Applicant(s)

ECK ET AL.

Examiner

CLAIRE WANG

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 6-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-85/86)
Paper No(s)/Mail Date 6/10/2005, 3/3/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-7 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5, 1, and 9 are rejected under the second paragraph of 35 U.S.C. 112.

a. As to claim 5, it is in the form of an improper multiple-dependent claim.

See MPEP 608.01(n) [R-7] for examples of proper multiple-dependent claims.

b. Claim 1 recites the limitation "the possibly modified detail images" in line 7 and "the calculated output image strips" in line 9. There are insufficient antecedent basis for these limitations in the claim.

c. Claim 9 cites the limitation "and/or" in line 2. The phrase "and/or" is indefinite.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Carlson (5,022,091).

As to claim 1, Carlson teaches a method of processing an input image comprising N rows of image points (creating a first array of pixels corresponding to an input image, wherein each pixel has an address and a data value; Col. 7, lines 15-17), wherein a) an image strip comprising $n < N$ adjacent rows of the input image (second array of data values at addresses corresponding to the location of features in the input image; Col. 7, lines 18-20 since another array is created then the first array must be less than the original pixel row) is resolved into a sequence of K detail images, which in each case contain just some of the spatial frequencies of the input image (creating pyramid of different levels from the original image; Fig. 2); b) at least one of the detail images is modified (base level is modified to provide an improved output image; Col. 7, lines 47-48); c) an output image strip is reconstructed from the possibly modified detail images (base level is modified to provide an improved output image; Col. 7, lines 47-48); d) steps a), b) and c) are repeated for other image strips of the input image (the pyramid is filled one level at a time from the bottom to the top until it is finished; Col. 4,

lines 52-67); e) an output image (A) is reconstructed from the calculated output image strips (base level is modified to provide an improved output image; Col. 7, lines 47-48).

As to claim 2, Carlson teaches each image strip is resolved into a Laplacian pyramid (Col. 3, line 66) and a Gaussian pyramid (Col. 3, lines 63-64) with K stages (see different levels displayed using the pyramid method; Fig. 2).

As to claim 3, Carlson teaches the image strips each have a width of 2^K rows (Col. 3, lines 35-38).

As to claim 4, Carlson teaches the modification of a detail image of the resolution stage $j < K$ is effected using a filter, the coefficients of which depend on at least one gradient calculated from the image strip (implementation of the content adaptive filtering scheme wherein the filtered gradient is used; Col. 4, lines 25-41).

As to claim 5, Carlson teaches the gradient is calculated from the Gaussian pyramid representation of the j-th resolution stage (the edge or the maximum change, also known as gradient is calculated from the pyramid data structure; Col. 4, lines 28-37).

As to claim 8, it is the system claim of claim 1. Carlson also teaches a system (See Fig. 1). Thus, claim 8 will be analyzed in the same manner as claim 1. Please see above for detail analysis.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson in view of Sutha et al. (US 6,298,162 B1 hereinafter "Sutha")

As to claim 9, Carlson teaches an image processing technique wherein the pyramid or hierarchal methods are used to reduce noise (Col. 1, lines 5-10). Sutha teaches a multi-resolution pyramid and hierarchical image processing technique using parallel processors (Abstract). Thus, Sutha reads on the claimed containing parallel processors or vector processors. Therefore, it would have been obvious for one ordinarily skilled in the art at the time the invention was made to combine the pyramid method of Carlson with the parallel processors of Sutha in order to produce a faster process (Sutha Abstract).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson in view of Vuylsteke et al. (5,461,655 hereinafter "Vuylsteke").

As to claim 10, Carlson teaches an image processing technique using pyramids to suppress noise in synthetic aperture radar imagery (Col. 1, lines 5-10). Vuylsteke teaches an apparatus for noise reduction (Title) using pyramidal scheme (Fig. 3a) for radiology system (Col. 1, lines 5-10 also see Fig. 2). Thus, Vuylsteke reads on the claimed X-ray system comprising an X-ray source; an X-ray detector; coupled to the X-ray detector, for processing the X-ray input images transmitted by the X-ray detector. Therefore, it would have been obvious for one ordinarily skilled in the art at the time the invention was made to replace the radar imagery of Carlson with the X-ray imagery of Vuylsteke since it is simply substituting one way of gathering digital image with another but the end result is still a digital image.

Allowable Subject Matter

9. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Wang (US 6,674,915 B1) teaches descriptors adjustment when using steerable pyramid to extract features fro content based search (Title).

Contact Information

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLAIRE WANG whose telephone number is (571)270-1051. The examiner can normally be reached on M-F 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C Bella/
Supervisory Patent Examiner, Art
Unit 2624

Claire Wang
12/18/2008